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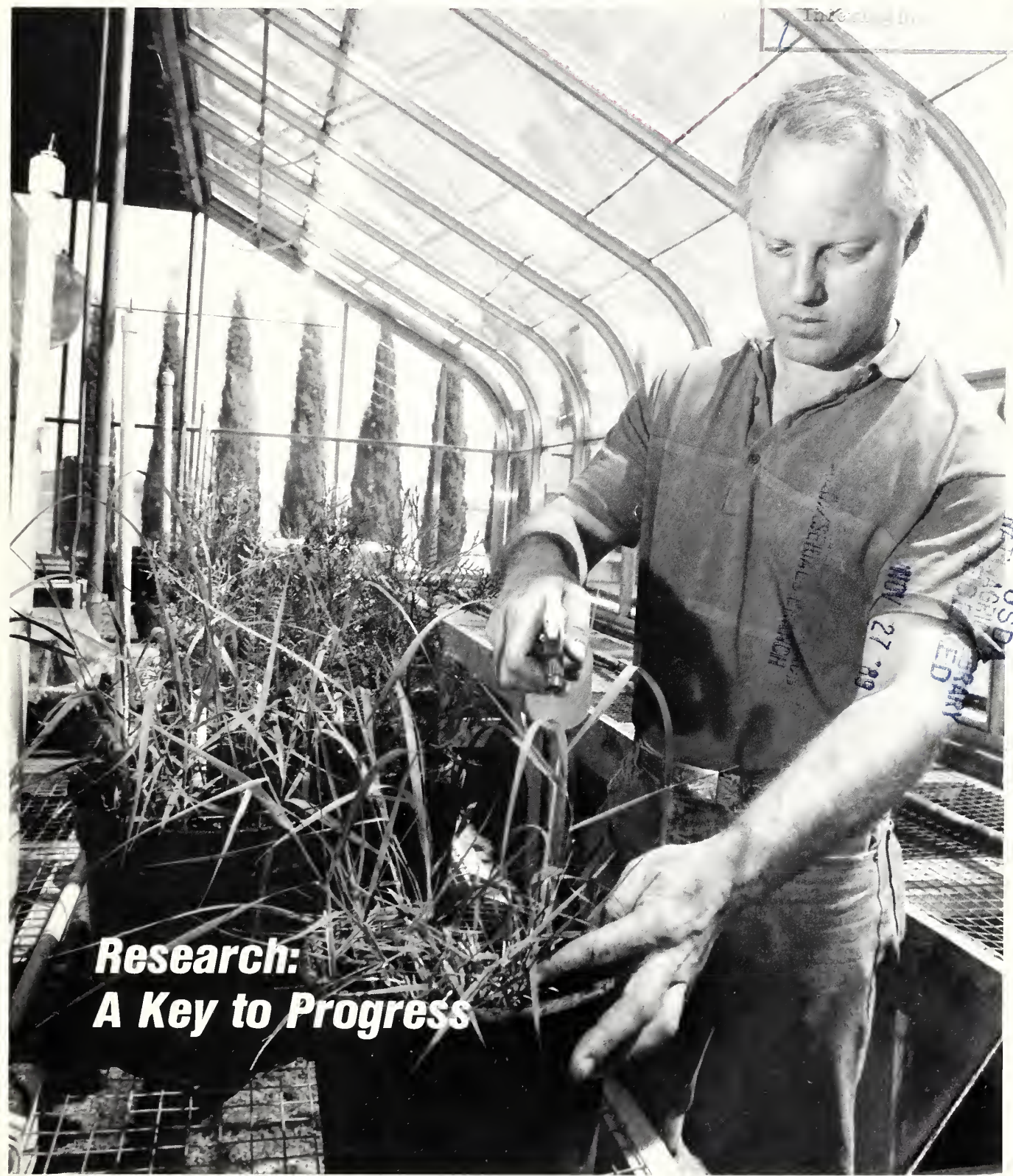
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United States  
Department of  
Agriculture  
  
Soil  
Conservation  
Service

AUGUST 1989

Volume 10, Number 5

GHK



**Research:  
A Key to Progress**



**Cover:** Gary Fine, manager of the Manhattan, Kans., Plant Materials Center, examines seedlings in the Center's greenhouse. (Photo by Ron Nichols.)

# Comments from the Chief

## Research: We Need It

Our main job in SCS is to work directly with farmers and ranchers to assist them as they manage their resources wisely and efficiently. Now that we, and other agencies in the Department of Agriculture, have been charged by Congress to implement the conservation provisions of the 1985 Food Security Act, this job is even bigger.

In order to carry out this task, we must have the very best and latest information. Most of this information comes from the hard work and dedication of research scientists around the country . . . like the valuable work that's being done by the Agricultural Research Service on the new erosion prediction models that are going to help us implement the Food Security Act in a way that's fair and helpful to farmers . . . and like the important research at Texas Tech offering new options for folks who manage native grass operations.

There's something else needed too — well-informed landowners and operators who understand the need to maintain and improve their soil, water, plant, and wildlife resources. For this we look to the expert communicators in the cooperative extension services throughout the Nation. An example is in northern Alabama, where limited resource farmers are benefiting from the Alabama A&M University's Small Farm Soil Conservation and Farming Systems Demonstration Project. Another is in Tennessee, where extension specialists have done an outstanding job in promoting conservation tillage.

We in SCS need these fine scientists and communicators and have good uses for their work . . . and so do the farmers and ranchers we serve.



*Soil and Water Conservation News* is the official magazine of the Soil Conservation Service. The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *Soil and Water Conservation News* has been approved by the Director of the Office of Management and Budget. *Soil and Water Conservation News* (ISSN-0199-9060) is published 12 times a year. Postage paid at Washington, D.C.

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**Subscriptions**  
Send subscription orders to: Superintendent of Documents U.S. Government Printing Office Washington, DC 20402

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# Research

## A Key to Progress

**S** OIL AND WATER RELATED research is important, not only in improving methods and technologies for planning and applying conservation systems, but in increasing public awareness of the necessity for soil and water conservation.

The Soil Conservation Service of the U.S. Department of Agriculture (USDA) recently reported more than 200 significant items of progress in its biennial report on research. The report is prepared by the agency's National Research Committee to inform SCS personnel of usable research findings and to inform public and private research and education agencies of additional research needed to help the agency perform its mission.

Except for some of its soil survey activities, SCS is not a research agency. SCS personnel, however, work closely with research and extension agencies to focus research activities, adapt research findings to SCS programs, and demonstrate the practical applications of research findings to land users. These agencies include – but are not limited to – USDA's Agricultural Research Service (ARS), Economic Research Service, Extension Service, Cooperative State Research Service, and Forest Service; State Agricultural Experiment Stations; the U.S. Geologic Survey; the Environmental Protection Agency; the U.S. Army Corps of Engineers; and



Brent Schroeder, engineering technician at the Agricultural Research Station at Kansas State University in Manhattan, lifts soil plates in a wind tunnel after a wind test (Photo by Ron Nichols.)



## Priority remains high for completion of WEPP, WEPS, RUSLE, and other programs.

many State agencies and universities.

Steady progress continues to be made in the ongoing development of improved, computer-based models to predict soil erosion, to estimate the onsite and offsite effects of erosion, and to acquire and use natural resource data. Many of these efforts are being conducted by ARS and are known by their acronyms, such as WEPP (Water Erosion Prediction Project), WEPS (Wind Erosion Prediction System), and EGEM (Ephemeral Gully Erosion Model). SCS is providing soils information and assistance in collecting the extensive data sets required by these models.

A few of the many other items of progress made over the past 2 years include:

- A project at the University of California — Riverside has shown that surface runoff of agricultural chemicals is far less than has been traditionally assumed, due to volatilization of the chemicals into the air.
- A Montana State University graduate student discovered a fungus that attacks knapweed. As a result, a compound has been isolated for controlling spotted knapweed, a problem in range management.
- A 7-year University of Tennessee study showed 98 percent less soil loss with conservation tillage than with conventional tillage.
- A joint Texas A&M, ARS, and SCS effort has resulted in more and better ways to use EPIC (Erosion-Productivity Impact Calculator).

- Clemson University has developed a comprehensive integrated pest management system for soybeans in conservation tillage systems.
- ARS research at Stoneville, Miss., has demonstrated that the use of rope-wick applicators dramatically reduces herbicide application rates, thereby benefiting water quality.
- Research at Louisiana State University and Oregon State University has shown that subsurface drainage in some soils can reduce erosion 30 to 40 percent.
- ARS scientists at Beltsville, Md., have found lower concentrations of nitrates in ground water under no-till crops than under conventionally tilled crops.
- Alabama A&M University recently completed work on a farm project to demonstrate the effectiveness of the combined research, extension, and demonstration approach in helping limited resource farmers apply soil conservation and farming systems.

In addition to reviewing progress, the committee also identified the agency's most pressing research needs. The committee selected research needs based on how much they would contribute to USDA's National Conservation Program (NCP) objectives and the implementation of the conservation provisions of the Food Security Act of 1985.

Priority remains high for completion of WEPP, WEPS, RUSLE (Revised Universal Soil Loss Equation), and other ongoing projects. A few of the 230 other needs are:

- A reliable and inexpensive test for the nitrogen available to plants to a

soil depth of at least 4 feet.

- Determinations of how farmers can best use Conservation Reserve Program lands in a sustainable manner once the 10-year contracts expire and of how to encourage farmers to adopt these uses.
- Effective weed and brush control methods that will not impair water quality, especially along stream corridors.
- Evaluation of the environmental, social, and economic effects of low-input, sustainable agricultural systems.
- Projections of the conservation and sociological effects of agricultural biotechnology, including effects on the social structure of agriculture.
- Improved knowledge on the effects of various grazing systems on forage productivity, soil hydraulic properties, and wildlife.

Information for the biennial report on research was initially submitted by SCS research committees in each State, screened by research committees at each of SCS's four national technical centers, and then finalized by the National Research Committee. Copies of the report are available from the SCS research committee in each State.

**Gerald Welsh**, research coordinator, SCS, Washington, D.C.

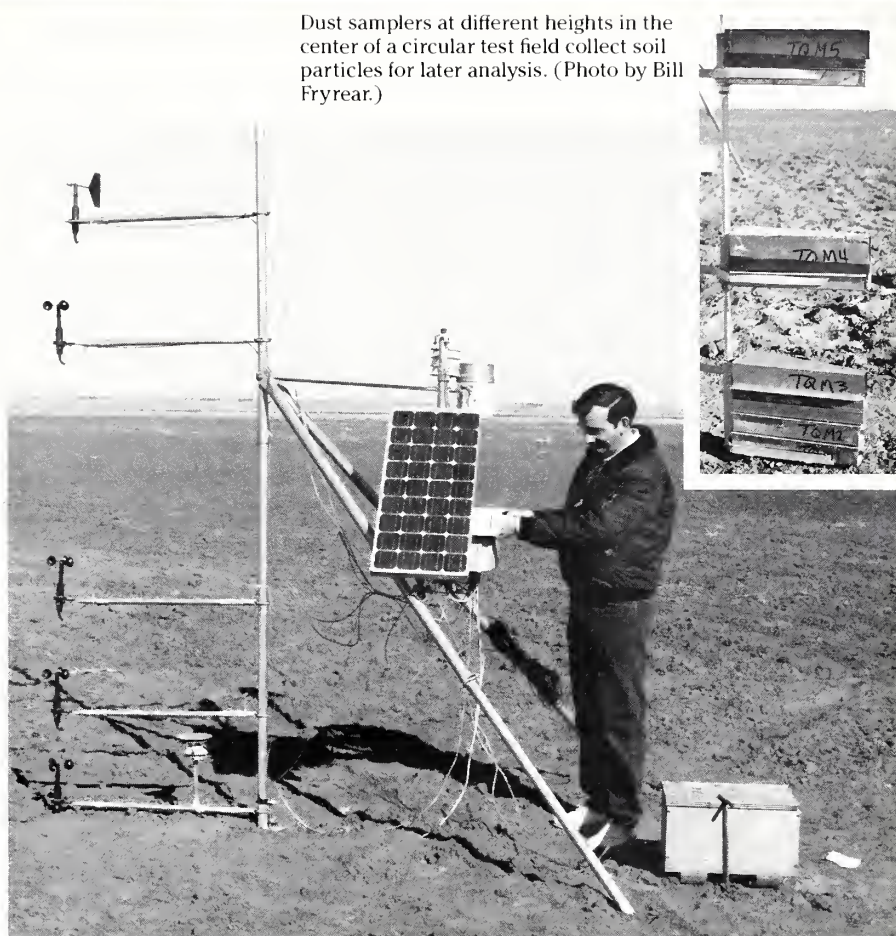
# Collecting Data for WERM

**I**F THERE'S ONE THING employees of the Soil Conservation Service don't like to do, it's to stand by and watch the wind blow the soil away. But this is exactly what they're doing at several sediment collection sites across the Nation.

SCS employees at these sites are helping the Agricultural Research Service (ARS) of the U.S. Department of Agriculture to validate the Wind Erosion Research Model (WERM). WERM is a sophisticated, computer-based research model that will be used to develop a user-friendly Wind Erosion Prediction System (WEPS).

Data gathered at the sites are used to validate and improve WERM's ability to predict wind erosion as it relates to climate, soils, crop growth, decomposition of organic matter, tillage, field size and shape, and other factors. Employees collect sediment caught in specially designed cans — or dust samplers — that are installed at different heights in the middle of a bare, circular field. The samples are then forwarded to an ARS lab in Big Spring, Tex., for analysis.

Automated weather stations record the wind speed and direction, air and soil temperature, relative



Dust samplers at different heights in the center of a circular test field collect soil particles for later analysis. (Photo by Bill Fryrear.)

ARS engineering technician Charles Yates programs a solar-powered weather station that records data at Big Spring, Tex., as part of the development of the Wind Erosion Research Model. (Photo by Bill Fryrear.)

humidity, solar radiation, and rainfall. At other plots, researchers are monitoring changes in soil characteristics to determine what combinations of management practices and other factors affect the susceptibility of different soils to wind erosion.

If all goes according to schedule, WEPS will be available for large-scale applications such as the National Resources Inventory by 1991.

SCS personnel should be able to have a user-friendly version of WEPS on field office microcomputers by 1993. This version will also enable the user to make daily estimates of the crop damage caused by wind erosion.

**Paul Barker**, associate editor, *Soil and Water Conservation News*, SCS, Washington, D.C.



“We’re not going to wait on agriculture to turn around nationally. We’re going to pick ourselves up by the bootstraps and do it ourselves . . .”

## Catfish Bring Success

**T**HE ANSWER TO A POOR agricultural economy in Hampton County, S.C., was lurking in the creeks and rivers: catfish. A commercial production and processing operation, Lowcountry Aquaculture, has been developed in the Hampton and Jasper County area with the capability of processing fish raised in about 1,000 acres of ponds.

The region’s traditional agriculture should be revitalized as 95 percent of what goes into catfish feed can be locally grown.

Instrumental in establishing this facility were twin brothers Lynn and Bob Youmans, widely known for their successful and innovative agricultural practices. They and other community leaders assembled a team of local people and developed the plans for the stock-held company. The initial plan called for raising capital for the processing plant and at the same time developing a marketing scheme.

“We were looking for a plan that would provide an economic and employment boost to the area,” Lynn Youmans said. “We were losing traditional agriculture, the basis of the local economy, and felt that it was unrealistic to expect help to come from somewhere other than ourselves.”

The Youmans brothers went about their task intensively. They traveled to Mississippi several times to study similar catfish operations. They brought in a fisheries consultant and asked the Soil Conservation Service for help with the

engineering specifications for their 1,000 acres of ponds. They also contacted the Clemson Extension Service for advice.

Walter Earley, SCS district conservationist of Hampton County, helped in engineering plans for the ponds, suggesting designs, and assisting with the survey work. “All the engineering is above our standards,” he said. “They haven’t cut any corners.”

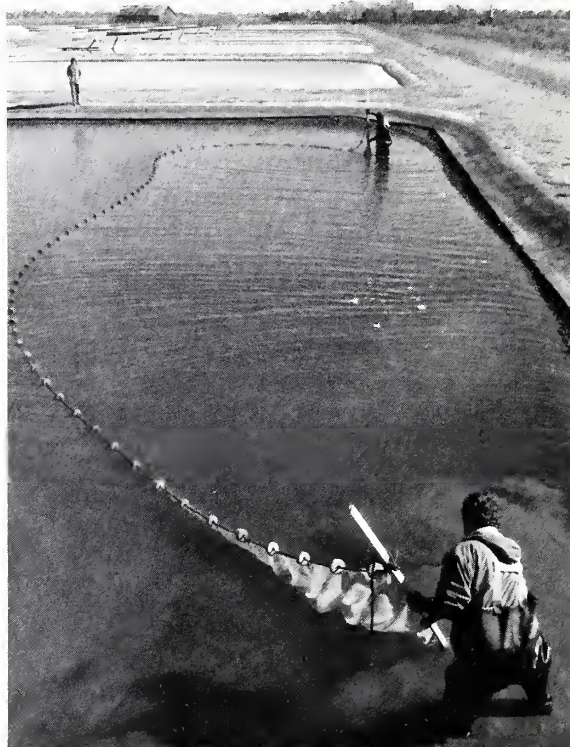
Catfish production isn’t as simple as putting fish in the pond and ignoring them. They have to be carefully fed, and special attention must be paid to the oxygen level of the ponds. Special aerators are used to increase the oxygen level when it’s necessary. The ponds must be drained every 3 or 4 years to maintain levees, control weeds, and adjust the pH of the pond bottom.

With the construction of a feed manufacturing plant in the area and the expansion of ponds — eventually planned for 3,000 acres of catfish — to smaller farms, a more stable market would be developed for area cropland.

“The ripple effects through the agribusiness community to the community as a whole are obvious,” Bob Youmans said.

“We’re not going to wait on agriculture to turn around nationally. We’re going to pick ourselves up by the bootstraps and do it ourselves. The time has come for us to add to employment, to add to the tax base, and add to the community,” Bob Youmans said.

**David Allen**, former public affairs specialist intern, SCS, Columbia, S.C.



Catfish owners seining (trapping and collecting) fish in one of several ¼-acre ponds. (Photo by Barry Fitzgerald.)



A recent breakthrough in seed production has projected Eastern gamagrass potentially as a major forage and conservation plant.

## Plant Materials Solve Problems

**S**OME INTERESTING SOLUTIONS for conservation problems come from the Soil Conservation Service's 26 Plant Materials Centers (PMC's) located around the country. Already in 1989, a dozen new plants have been tested and released, the same number as in all of 1988. These plants are released to aid in conservation work, such as erosion prevention, streambank stabilization, protection of range and pastureland, and wildlife habitat improvement.

The plant releases come from years of cooperative testing by PMC's, SCS field offices, and other Federal and State agencies.

One recent release offering long-term potential is Pete' Eastern gamagrass. This native grass grown in the Great Plains and Eastern States had been thought of as an excellent forage plant, producing a large volume of forage that is palatable, nutritious, and readily eaten by all classes of livestock. It is so palatable, in fact, that most natural stands have been decimated by grazing. However, in years past, it wasn't promoted because it was a mediocre seed producer, had establishment difficulties, and needs close grazing management to grow well.

However, a recent breakthrough in seed production has projected



Richard Cantu (left), district conservationist in Osborne, Kans., works with local land-owner Al Gutlery to determine residue levels on a corn field. (Photo by Ron Nichols.)

Eastern gamagrass potentially as a major forage and conservation plant. This breakthrough may allow for significantly improved seed production. Pete' will be a part of the evaluation at several PMC's to realize the potential value of Eastern gamagrass. Not only is it now being more widely tested as a forage crop, but it has the possibility of being an effective replacement crop for corn on highly erodible land in the New England States.

The production of corn silage to support the dairy industry in New England is essential. But the 1.1 million acres of corn silage land in the six New England States, New York, and Pennsylvania are conservatively estimated to lose, on an average, 18 tons of soil per acre per year.

Eastern gamagrass has the potential of producing total digestible nutrient levels equivalent to silage corn grown on marginal cropland. As a perennial, it supports long term, sustainable agricultural production; erosion in a field of Eastern gamagrass would be nearly zero. If Eastern gamagrass were planted on only 20 percent of the most erodible corn silage land, research suggests that soil erosion would be reduced by more than 4 million tons annually.

The pull-out chart on the next two pages describes the 24 plants that have been released in 1988 and 1989.





Plant Materials  
Center Releases  
for 1988-89

United States  
Department of  
Agriculture



Common Name	Scientific Name	Cooperating Agencies	Attributes
1989 Releases:			
'Pete' Eastern gamagrass	<i>Tripscan dactyloides</i>	ARS; Kans. AES.	Native warm season grain with excellent forage potential. Recommended for pastures, wildlife plantings, and reestablishing native prairie.
'Pronghorn' prairie sandreed	<i>Calamovilla longifolia</i>	ARS; Kans. PMC; Nebr. AES.	Native warm season grass used for reseeding Nebraska Sandhills region after irrigated grain farming became impractical due to high energy costs and low commodity prices.
'Tropic Shore' seashore paspalum	<i>Paspalum vaginatum</i>	Hawaii PMC; Hawaii Institute of Tropical Agri.	Developed primarily for stabilizing shoreline and banks of aquaculture ponds and canals and streams with brackish or salty water.
'Pryor' slender wheatgrass	<i>Elymus trachcalus</i>	Mont. PMC; Mont. and Wyo. AES; Conserv. Distrs. of Mont. and Wyo.	Short-lived, cool season perennial bunchgrass with superior drought and salt tolerance and seedling vigor. Developed primarily for use in mixtures in conservation and reclamation plantings.
'Rhizo' kura clover	<i>Trifolium ambiguum</i>	Ky. PMC; Ky. AES.	Used primarily as a pasture legume. Strongly spreading rhizomes may help maintain stands in pastures with grasses. Stands thicken with age.
'Ruby' redosier dogwood	<i>Cornus stolonifera</i>	N.Y. PMC; Ky. AES.	Used primarily for streambank protection. Useful in bioengineering, slope stabilization, and fish and wildlife habitat improvement. Fruit provides food for many different birds.
'Tomahawk' indiagrass	<i>Sorghastrum nutans</i>	N.Dak. PMC; ARS; N.Dak., Minn., and S.Dak. AES.	Primary use is on sites where indiagrass is recommended for range and pasture seedings, wildlife habitat, and natural area development. It is also used for the revegetation of mined land, erosion control structures, and transportation corridors.
'Multnomah' Columbia River willow	<i>Salix fluviatilis</i>	Oreg. PMC; Oreg. and Wash. AES.	Recommended for use in streambank and dredge spoil stabilization as well as the restoration of riparian areas. It has potential for use as native screens, wildlife habitat, natural area landscaping, and low maintenance plantings where thickets are desired.
'Plumas' Sitka willow	<i>Salix sitchensis</i>	Same as above.	Recommended for use in streambank stabilization as well as the restoration of riparian areas. Has potential as native screen, wildlife habitat, windbreaks, and natural area landscaping.
'Clatsop' hooker willow	<i>Salix hookeriana</i>	Same as above.	Recommendations same as above but with additional recommendations for coastal meadows and marshes.
'Nehalem' Pacific willow	<i>Salix lasiandra</i>	Same as above.	Recommendations same as above and also tolerates flooding well. May be useful for vegetating the shores of reservoir drawdown zones
'Placer' erect willow	<i>Salix ligulifolia</i>	Same as above	Recommendations same as for 'Plumas' Sitka willow.
1988 Releases:			
'Bonilla' big bluestem	<i>Andropogon gerardii</i>	N.Dak. PMC; ARS; N.Dak., S.Dak., and Minn. AES.	Superior winter hardiness and persistence coupled with higher seed producing ability. Forage production exceeds northern seed sources of cultivars "Champ" and "Kaw." Increased animal gains in some trials.
'Hobble Creek' mountain sagebrush	<i>Atemisiatidentata</i>	Utah AES; FS; Utah State Div. Wildlife Res.; Colo. and Idaho AES.	High degree of preference by wintering mule deer and most preferred by sheep. Productivity and vegetative production were ranked in highest group.
'Santa Rita' fourwing saltbush	<i>Atriplex canescens</i>	Ariz. PMC; ARS; Ariz. AES.	Leaves, stems, and fruits provide browse for livestock and wildlife and has use in critical area stabilization, shelterbelts, range improvement, and wildlife plantings.
'WW-Iron Master' Turkestan bluestem	<i>Bothriochloa ischaermum</i>	ARS; SCS.	Outstanding resistance to iron chlorosis and superior performance on iron deficient soils.
'Centennial' cotoneaster	<i>Cotoneaster integerrima</i>	N.Dak. PMC; Nebr., S.Dak. and Minn. AES; N.Dak. and S.Dak. Assn. Cons. Dis.	Quality and quantity of fruit, fireblight resistance, attractive foliage and fruit, and large size permit use in multirow farmstead and field windbreaks, wildlife plantings, and recreational development.
'Sierra' sulphur flower buckwheat	<i>Eriogonum umbellatum</i>	Calif. PMC; Calif. AES.	Good soil erosion control on dry, rocky slopes and droughty sites.
'Seco' barley	<i>Hordeum vulgare</i>	Ariz. PMC; ARS; Ariz. AES.	Selected for best overall performance in vigor, height, root spread, and yield under dryland plantings in the hot and arid southwest.
'Forestburg' switchgrass	<i>Panicum virgatum</i>	N. Dak. PMC; N.Dak., S.Dak., and Minn. AES.	Superior winter cold tolerance and seed production.
'KY-1625' switchgrass	<i>Panicum virgatum</i>	Ky. PMC; Ky. AES.	Germplasm release, made available to plant breeder because of fine stems, leafiness and late maturity. Shown to have high protein and digestibility levels.
'Shelter' switchgrass	<i>Panicum virgatum</i>	N.Y. PMC; (others).	Upright form and stiff stems to provide spring nesting cover for groundnesting birds.
'Steiner' black locust	<i>Robinia pseudoacacia</i>	National PMC; FS; WVa. Dept. of Agric.; ARS.	Above average resistance to stem bore, strong pinnate growth forms, straight stems, and high growth rate.
'Plateau' awnless bush sunflower	<i>Simsia calva</i>	Tex. PMC; Tex. AES; Tex. Parks and Wildlife Dept.	A warm season forb for inclusion in range and wildlife seedings which has good drought tolerance, responds to good grazing management, is eaten by livestock and big game longifolia.
<div><div>Key: AES – Agricultural Experiment Station (USDA unless otherwise indicated). ARS – Agricultural Research Station (USDA unless otherwise indicated). FS – Forest Service (USDA).</div><div>N. Dak. PMC operated by N. Dak. Assn. of Soil Conservation Districts. PMC – Plant Materials Center (USDA unless otherwise indicated).</div></div>			



...one of the biggest benefits of the project was that it was one piece of research that finally addressed the needs of the small-scale and limited resource farmer.

## Research Benefits Small-Scale Farmers

**M**UCH OF FARMING RESEARCH historically has been targeted toward farmers with expansive acreage and the capital and expertise to develop sophisticated technologies in the management and maintenance of their farm lands.

However, in places such as northern Alabama, most of the land (84 percent) is made up of small-scale farms with resources too limited to implement research findings. It is also land with sheet and rill erosion that normally exceeds 10 tons per acre per year, more than twice the national average of 4.8 tons per acre per year.

In 1984 Alabama A&M University developed the North Alabama Small Farm Soil Conservation and Farming System Demonstration Project specifically to address the needs of small-scale and limited resource farmers. The project was designed to identify the needs of the small-scale farmer, consider his/her resource base, concentrate on the whole farm operation, and determine applicable techniques of soil conservation and income-generating interventions (changes). The

project was funded by the Soil Conservation Service.

Four farms, chosen from three counties, had serious erosion problems, were located near a main road or church, and had a willing and enthusiastic operator ready to cooperate in experimental interventions.

There were four challenges each farmer had not addressed:

- Farm management, including inability to adopt many of the well-known management practices or to seek needed advice and assistance. For example, many farmers were unaware of the seriousness of their erosion problems and were also unaware of assistance available to improve eroded soils. Other management problems included poor applications of fertilizer and lime, poor farm recordkeeping, and poor feed monitoring.
- Resource constraints, including insufficient operating capital caused by either the inability to secure credit or the reluctance to become indebted, a small land area that didn't permit the necessary expansion to make the operation economically viable, and a scarcity of reliable labor.
- High inefficiency, resulting from either a lack of information, information that was too technically presented to be easily understood, inadequate quantity and poor quality of critical resources, or poor management.
- Low productivity, primarily owing to marginal lands and old farm equipment. There was also an indifference of the farmers because of the demands of their off-farm job activities and their inability to upgrade their resources, including unattended soil erosion.

Intervention was directed at specific problem areas and incorporated into each farm plan to minimize the need to modify existing operations in order to accommodate on-farm experiments. The experiments concentrated on a combination of crops already grown on the farm, but also introduced others, such as grain sorghum and vegetables.

The study demonstrated the effectiveness of the "Farming Systems Research and Extension" approach in reaching small-scale, limited resource farmers in northern Alabama through research demonstrations and on-farm activities. It has made many area farmers more aware of farm management and assistance available from various agencies, especially with soil erosion and income-generating interventions.

Perhaps one of the biggest benefits of the project was that it was one piece of research that finally addressed the needs of the small-scale and limited resource farmer. It involved a bottom-up (farmer first) approach and on-farm soil conservation and crop production demonstrations that couldn't have been obtained comparably through a research station and/or the district conservationist's office experimentation. This approach has fostered good working relationships among project researchers; between researchers and extension agents; and between researchers, extension agents, and farmers who have mild to severe soil erosion problems.

**Kathleen Diehl**, contributing editor, SCS, Washington, D.C.



On the last day of camp, the (young people) argue their land use proposals before the "county council," made up of their peers.

## Campers Study Natural Resources

**E**ACH SUMMER, SOME 30 students from Calvert, Charles, and St. Mary's Counties get together to learn about southern Maryland's natural resources. In its eighth year, the Tri-County Natural Resources Camp, organized through the Southern Maryland Resource Conservation and Development (RC&D) Council, is held at the Elms Environmental Education Center on the Chesapeake Bay. The Center is a State-owned property leased by the St. Mary's Board of Education to hold camps to increase young people's awareness of the environment.

The students, soon to be high school sophomores and juniors, also include a small contingent from Prince George's County and come from predominantly rural and suburban backgrounds. The camp is financed by contributions obtained by the RC&D council and from local businesses in the students' conservation districts. The staff is largely volunteer. This year, the week-long camp was held in mid-June.

At an all-camp meeting opening night, campers form small groups and receive land use planning assignments. The assignment requires them to develop a proposal for a specific land use.

The rest of the week the campers make field trips throughout the area to observe and investigate various alternatives for land use. Forests, farms, power plants, and wildlife areas are all toured. State agency personnel with expertise in these areas assist in the tours and provide additional information and insight. At the end of each day, the students return to the camp and meet in their small groups to discuss what they learned and how it can apply to their particular assignments.

On the last day of camp, the groups argue their land use proposals before a "county council,"

made up of their peers. Proposals are expected to be thorough, and include a plan of action as well as cost analysis, feasibility, and the expected maintenance. Later that evening, all of this hard work is rewarded with a memorable bonfire on the shores of the Chesapeake Bay. The 1987 camp was a semifinalist in the Take Pride In America campaign, and was honored at a White House reception.

**William W. Boyer**, RC&D Coordinator, SCS, La Plata, Md.



Students from southern Maryland's natural resources camp learn about land use alternatives.

... after an impressive community effort, a new park that is both beautiful and functional was built.

## Community Teamwork Builds Park

**T**HE SLOW DAYS OF SUMMER are made even slower when nobody is playing baseball in the local park. When the sounds of children playing in a swimming pool are absent, it seems hotter than it is.

In Dickson, Tenn., however, after an impressive community effort, a small local park was refurbished and enlarged and today is both beautiful and functional. It now includes four baseball fields, six tennis courts, a swimming pool and bathhouse, and a play area for small children. During the summer baseball season, more than 2,600 people visit the park on an average day.

How did the community of Dickson set such a goal and mobilize to achieve it?

The late Guy Corlew, president of

the Dickson County Chamber of Commerce and an officer and director of the Five Rivers Resource Conservation and Development Association (Council), had a vision of restoring the park, which had become a community eyesore — a dry lake and several gullies. Corlew called a group of interested citizens together to share his vision and they initiated the plans for a new community park that would turn the wasted area into a center for community activity.

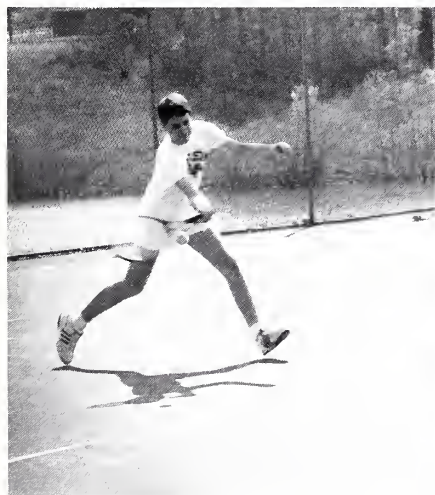
The Five Rivers RC&D Board of Directors approved the project and agreed to take on the critical erosion problem. They asked the Soil Conservation Service to develop a plan for the park to halt the gully formation. The city of Dickson and the Dickson County Soil Conservation District agreed to become sponsors of the measure. Arrangements were made with Fort Campbell, Ky., military personnel to do the rough-grade work as a training exercise, and the city hired a local contractor to do the finish-grade work. SCS provided engineering and technical assistance.

In addition to the city, the Army, and the RC&D program, funds were secured from several sources, including the U.S. Department of Housing and Urban Development, the Bureau of Outdoor Recreation, the Tennessee Valley Authority, and the Comprehensive Employment and Training Act (CETA) to install the recreational facilities.

However, the park became a reality because of the community volunteer effort. Approximately 54 people donated 584 hours in the planning and promotion of the park. Volunteers came from the Dickson County Chamber of Commerce, the Five Rivers RC&D Board of Directors, and the Dickson County Soil Conservation District Board, making the park truly a community effort.

Now, the summer days and nights are filled with baseball and swimming sounds and, because there is a restful place to pass the hours, the summer is way too short.

**Eddie D. Smith**, RC&D Coordinator, SCS, Clarksville, Tenn. and **Billy Gulledge**, district conservationist, SCS, Dickson, Tenn.



Activities in community park in Dickson, Tenn., include tennis, swimming, and baseball. (Photo courtesy of the Dickson Herald.)



When her telephone rings, a light above her desk flashes; an amplifier in the receiver increases the volume enough for her to hear the caller.

## Computer Clerk Sees The Light

**W**HEN EMPLOYEES OF the Delaware State Office of the Soil Conservation Service see a flashing overhead light in the office, they don't worry about equipment breakdown or emergencies. They know it's part of the innovations that help Cherie Castellan do her job.

Castellan's hearing has been severely impaired since early childhood, but it hasn't affected her work as a computer clerk for the Delaware State Office. She began her SCS career in 1987 as a cooperative education student and was hired later the same year to assist with the input of data related to the conservation provisions of the Food Security Act (FSA) of 1985.

Most of Castellan's duties as a computer clerk are not affected by her hearing impairment. For the remainder of her daily activities, SCS has provided special equipment to overcome some of the barriers. When her telephone rings, a light above her desk flashes; an amplifier in the receiver increases the volume enough for her to hear the caller. When she participates in meetings, open discussions, training



Cherie Castellan at her desk in the Delaware State Office.

sessions, or seminars, a device strategically located or worn by the speaker sends an FM radio signal to a receiver Castellan is tuned to. A strobe light connected to the fire alarm system has been installed in her work area to warn her of any emergencies.

"If you want to talk results, they are excellent," said David Benner, assistant State conservationist for Delaware. "Her handicap doesn't enter into it. I am impressed with her dedication and commitment to getting the job done."

"Some working situations are a bit difficult for me because I lip-read a great deal," acknowledges Castellan. But as far as her job performance goes, her supervisor,

computer specialist Yolinda Lewis, can attest that this has had little impact.

"She's eager to please, she's an achiever, and a quick study," said Lewis. "She doesn't let her handicap get in the way. I believe everyone here at the State office has learned a great deal from the experience of working with Cherie."

**Rick Perrygo**, public affairs specialist, SCS, Washington, D.C.

## Fellowship Applications Accepted

Applications for the 1990 Leadership Development Program are being accepted until September 29, 1989. The 4-week program is sponsored by the National Center for Food and Agricultural Policy at Resources for the Future (RFF), and strives to enhance understanding about the issues and processes by which policy is formed and implemented.

Up to 25 fellowships will be awarded to midcareer professionals working in a field related to food and agriculture. Awards will be announced by October 31. The program will be held in Washington, D.C., in 2-week sessions between January and March 1990.

Participants will learn to analyze more effectively the impact of legislative, administrative, and regulatory policies on their organizations. There will be public policy seminars, workshops, and independent policy projects that cover the full spectrum of food and agricultural policy issues.

RFF is an independent, nonprofit research organization that advances research and public education in the development, conservation, and use of natural resources, including quality of the environment. The National Center for Food and Agriculture Policy was established as part of RFF in 1984 to examine public policies involving agriculture.

Applicants must have a baccalaureate degree, 5 years of work experience, and a desire to become more effective as a leader in the field of food or agriculture. Further information and application forms can be acquired by writing to: LDP, NCFAP, Resources for the Future, 1616 P Street, N.W., Washington, DC 20036.

## Conservationists Recognized

Recently, 21 individuals and 5 organizations from across the United States won Chevron Conservation Awards for their efforts in conservation/environmental work. The goal of the award program is to encourage and reward individuals and organizations who devote themselves, often without pay or recognition, to the conservation of our natural resources and enhancement of the environment.

The Conservation Awards Program, celebrating its 35th anniversary, is the oldest privately sponsored program of its kind in the United States. The program was founded in 1954 by Ed Zern, a nationally prominent outdoor writer and lifelong conservationist.

"The (people who won)," said Zern, who continues to direct and guide the program, "represent an unbroken commitment to conservation and symbolize the very best in our society. Through their work, which often goes unnoticed, the quality of our environment and the quality of life have been improved significantly for us all."

The deadline for the 1990 awards is December 1, 1989. For further information and nomination forms,

write to Chevron Conservation Awards, P.O. Box 7753, San Francisco, CA 94120.

## Water Resources Workshop Held

The National Soil Conservation Service Water Resources Workshop was held May 17-19, in Oklahoma City, and followed the NACD-sponsored National Watershed Conference. The Oklahoma Conservation Commission and the State Association of Conservation Districts hosted the National Watershed Conference. The SCS workshop focused on what was learned from the NACD conference as well as current program initiatives and direction.

SCS Associate Chief Manly Wilder, speaking for Chief Wilson Scaling, stressed three areas at the conference. First, while emphasizing his support for the small watershed program, he urged elimination of projects that no longer are justified in terms of the economics or environmental effects. Second, he lauded SCS's record in implementing its action plan for civil rights. Third, he charged the audience to implement program-neutral natural resource planning. Program-neutral planning addresses problems without preconceived solutions. Focusing on hydrologic units, it attempts to present all the alternatives, letting landowners decide their own solutions based on consideration of their resource base.

Additional sessions were offered in hydrologic unit planning and the future of water resources.



## Selenium in Agriculture and the Environment

Edited by L. W. Jacobs

This publication resulted from a symposium in New Orleans sponsored by the American Society of Agronomy (ASA) and the Soil Science Society of America (SSSA). It is a review of the current geochemistry, chemical reactions, and factors affecting the bioavailability

of selenium (Se) in various ecosystems. This text is a compilation of seven papers or reviews. Four of these research papers report recent findings on selenium. The other three pertain to selenium and the Kesterson Reservoir in California.

Selenium has been found to be a unique nutritional requirement for animals and humans; for example, deficiency of Se has caused health problems in livestock. Too high a level of selenium can be inimical to health (extremely high levels of selenium has been found to be fatal to some livestock and humans). Selenium levels have received consid-

erable attention from plant, soil, and animal scientists since the 1930's. There has been a resurgence of interest in selenium in the 1980's.

This is a relatively technical book, providing a wealth of information on how the presence of selenium in our environment relates to the soil and plant sciences, wildlife, and animal nutrition.

This 233-page softcover text is available for \$24. Copies are available from SSSA, ASA Headquarters Office, Attn: Book Order Department, 677 South Segoe Road, Madison, WI 53711. (SSSA Special Publication Number is 23.)

## Reactions and Movements of Organic Chemicals in Soils

Edited by B. L. Sawhney and K. Brown

Underground contamination involving chemicals from industrial and municipal wastes and agriculture is a major concern worldwide. The im-

mense complexity of these chemicals as well as their intricate interaction with various soils presents significant problems for those who are studying this condition.

This text summarizes research presented by scientists in Atlanta at a symposium that dealt with topics such as degradation, sorption reactions, and other processes that affect movement of different organic chemicals in sediments and soils. The text also contains models pre-

dicting the movement of these chemicals. The information presented is especially useful to those concerned with potential groundwater pollution caused by these chemicals.

This softcover text is 496 pages, and costs \$42. Copies are available from SSSA, ASA Headquarters Office, Attn: Book Order Department; 677 South Segoe Road, Madison, WI 53711. (The SSSA Special Publication Number is 22.)

## Land Husbandry: A Framework for Soil and Water Conservation

By T. F. Shaxson, N. W. Hudson, D. W. Sanders, E. Roose, and W. C. Moldenhauer

This handbook explores the topic of soil and water conservation measures on steep lands. Professional conservationists give suggestions regarding new ways to approach erosion control in the "millions of

hectares" of land threatened by soil erosion globally. According to this text, the cause of the increased problems of soil erosion in both developed and underdeveloped countries is that the "rapidly rising populations push people into steeper, more fragile land, which is then farmed more and more intensively."

This manual proposes various resource-conserving practices and guidelines for planning the optimal use of land resources on these erodible steep lands. It emphasizes the development of conservation plans that will be of special benefit to the farmer.

The concept for this manual arose from a workshop "Soil and Water Conservation on Steep Lands," which was organized by the Soil and Water Conservation Society and the World Association of Soil and Water Conservation. The 1987 workshop was held in San Juan, Puerto Rico.

This 64-page handbook is available from SWCS, 7515 N.E. Ankeny Road, Ankeny, IA 50021-9764. The cost is \$12 per copy.

NEW IN PRINT is prepared by Thomas J. Kergel, editorial assistant, *SWCS*, Washington, D.C.

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# Conservation Calendar

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<b>August</b>	1-3	American Society for Horticultural Science 86th Annual Meeting, Tulsa, Okla.
	13-16	Association of State and Interstate Pollution Control Administrators Annual Meeting, Nashville, Tenn.
	21-23	Nebraska Cattlemen's 2nd Annual Convention, Lincoln, Nebr.
	27-31	Reclamation, A Global Perspective (American Society for Surface Mining and Reclamation, Co-Sponsor), Calgary, Al, Canada

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<b>September</b>	4-8	The 119th Annual Meeting of American Fisheries Society, Anchorage, Alaska
	9-13	International Association of Fish and Wildlife Agencies, Pierre, S. Dak.
	17-22	American Water Resources Association Conference & Symposium, Tampa, Fla.
	19-20	American Veterinary Medical Association Symposium, Washington, D.C.
	20-22	National Waterways Conference, Inc., Annual Meeting, St. Louis, Mo.
	21-24	American Meat Institute Convention and Exposition, Chicago, Ill.
	24-27	National Convention of the Society of American Foresters, Spokane, Wash.
	27	Entomological Society of America Meeting, Washington, D.C.
	28-30	National Hay Association Convention, S. Padre Island, Tex.

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<b>October</b>	4-8	World Dairy Expo, Madison, Wis.
	11-13	International Agribusiness Forum, Bellevue, Wash.
	22-24	American Feed Industry Association Midwest Convention, Kansas City, Mo.
	29-Nov. 1	Southern Agricultural Association Convention, Pine Mountain, Ga.

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